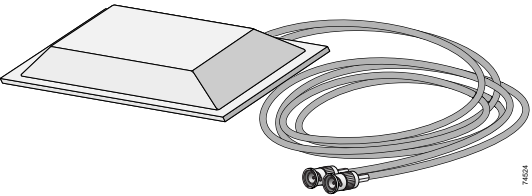# Cisco Aironet 2 dBi Diversity Omnidirectional Ceiling Mount Antenna (AIR-ANT5959)

Overview

This document outlines the specifications and description of the 2-dBi diversity omnidirectional ceiling mount antenna. This antenna operates in the 2400 - 2500 MHz band and is designed for use where an unobtrusive ceiling mounted antenna is required. The antenna is compatible with Cisco Aironet radio products utilizing a reverse-polarity threaded naval connector (RP-TNC) connector.
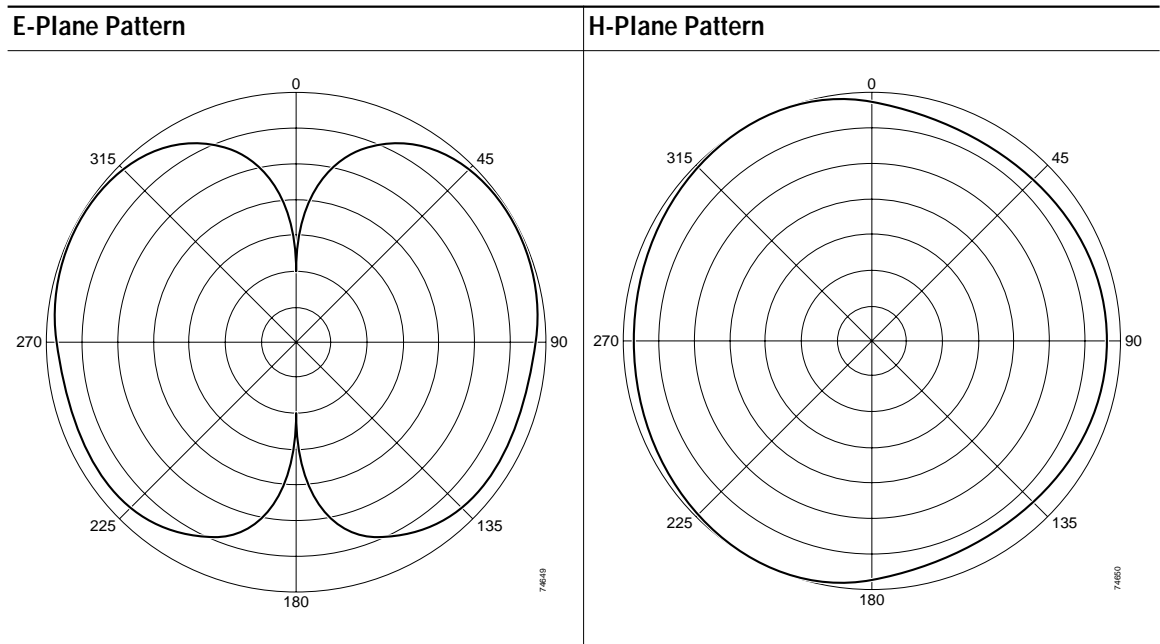
Technical Specifications

Antenna type	Omnidirectional patch
Operating frequency range	2.4 - 2.5 GHz
Nominal VSWR	1.7:1
Peak gain	2 dBi
Polarization	Vertical, linear
Azimuth plane beamwidth	Omnidirectional
Elevation plane 3 dB beamwidth	70 degrees
Cable	3 ft (0.9 mm) plenum rated
Dimensions	5.3 x 2.8 x 0.9 in (13.5 x 7.1 x 2.3 cm)
Weight	0.3 lbs. (0.14 kg)
Connector type	RP-TNC Male
Environment	Indoor, ceiling mount

CISCO SYSTEMS

E-Plane Pattern	H-Plane Pattern

System Requirements

A 2.4-GHz Cisco device that utilizes a RP-TNC connector.

Installation Notes

Because antennas transmit and receive radio signals, they are susceptible to RF obstructions and common sources of interference that can reduce throughput and range of the device to which they are connected. Follow these guidelines to ensure the best possible performance:

- Mount the antenna to utilize its propagation characteristics. A way to do this is to orient the antenna horizontally as high as possible at or near the center of its coverage area.

Note The antenna must be mounted horizontally in order to maximize its omnidirectional propagation characteristics. Mounting it vertically may noticeably decrease the antenna's range and overall performance.

- Keep the antenna away from metal obstructions such as heating and air-conditioning ducts, large ceiling trusses, building superstructures, and major power cabling runs. If necessary, use a rigid conduit to lower the antenna away from these obstructions.

- The density of the materials used in a building's construction determines the number of walls the signal must pass through and still maintain adequate coverage. Consider the following before choosing the location to install your antenna:

  - Paper and vinyl walls have very little affect on signal penetration.

  - Solid and pre-cast concrete walls limit signal penetration to one or two walls without degrading coverage.

- Concrete and wood block walls limit signal penetration to three or four walls.

- A signal can penetrate five or six walls constructed of drywall or wood.

- A thick metal wall causes signals to reflect off, causing poor penetration.

- A chain link fence or wire mesh spaced between 1 and 1 1/2 in. (2.5 and 3.8 cm) acts as a harmonic reflector that blocks a 2.4 Ghz radio signal.

- Install the antenna away from microwave ovens and 2-GHz cordless phones. These products can cause signal interference because they operate in the same frequency range as the device to which your antenna is connected.

- Install the antenna horizontally to maximize signal propagation.

Installation Notes

This antenna is designed to be mounted indoors on a suspended ceiling track having either flush or recessed mounted ceiling tiles.

Safety Instructions

Follow these safety instructions when installing your antenna.

- Plan your installation procedure carefully and completely before you begin.

- If you are installing an antenna for the first time, for your own safety as well as others, seek **professional assistance**. Consult your dealer, who can explain which mounting method to use for the location where you intend to install the antenna.

- Select your installation site with safety, as well as performance, in mind. Remember that electric power cables and telephone lines look alike. For your safety, assume that any line is an electric power line until determined otherwise.

- Call your local power company or building maintenance organization if you are unsure about cables close to your mounting location.

- When installing your antenna, **do not** use a metal ladder. **Do** dress properly - shoes with rubber soles and heels, rubber gloves, and a long sleeved shirt or jacket.

- If an accident or emergency occurs with the power lines, call for qualified emergency help immediately.

Installation Instructions

The following sections contain procedures for installing the antenna on a suspended ceiling.

Suspended Ceilings With Flush Mounted Tiles

The antenna is configured to mount to a suspended ceiling track with flush mounted tiles. No modifications are necessary. After you have selected a suitable location, follow these steps to mount your antenna. It may be helpful to examine the illustration below before you install the antennas.

Mounting
clips

Mounting
clip

Ceiling
track

Side view

Top view

60287
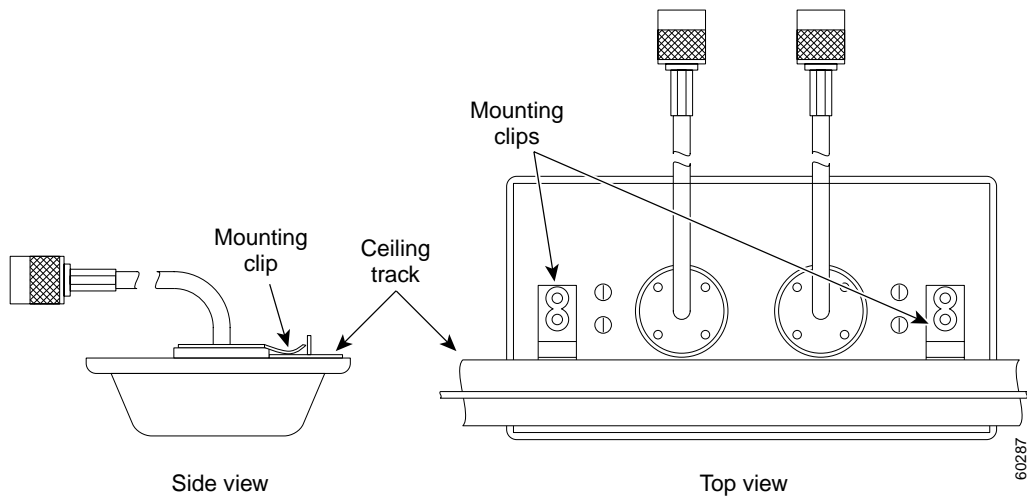
Step 1   Remove the two ceiling tiles on either side of the ceiling track.

Step 2   Line up the antenna's mounting clips with the track.

Step 3   Grasp the antenna with one hand and the track with the other while gently pushing the antenna until the clips are securely attached to the track.

Step 4   Route the antenna cables into the space above the ceiling grid and connect them to the device or extender cables.

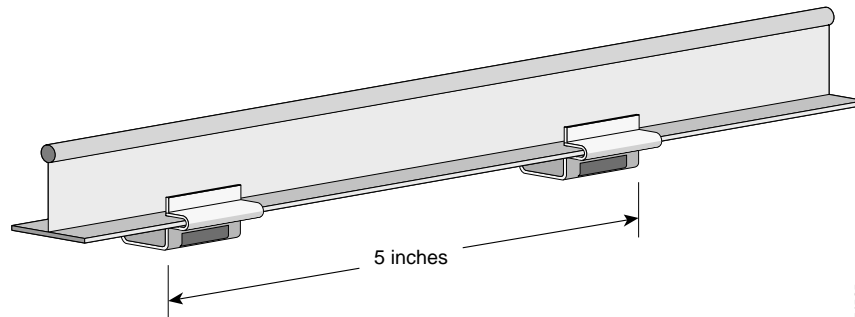**Step 5**   Replace the ceiling tiles.

✎
Note   You may have to trim some material from one of the tiles to accommodate the antenna cables.

Suspended Ceilings With Recessed Tiles

The antenna can be mounted to a suspended ceiling with recessed tiles by using the provided plastic recessed ceiling mounting clip adapter. After you have selected a suitable location, follow these steps to mount your antenna.

Step 1   Remove two ceiling tiles on either side of the ceiling track.

Step 2   Mark a center point on the ceiling track at the location where you intend to mount the antenna.

Step 3   Mark a point 2 in. (6.3 cm) from either side of the center point. The distance between these two points should be 5 in. (12.7 cm).

Step 4   Examine the adapter clips. One side has an elongated opening and a tab.

Step 5   Follow these steps to install a recessed ceiling mounting clip adapter at each point:

   a.   Insert the side without the opening and tab onto the ceiling track.

   b.   Push the tab to lock the other end onto the ceiling track.

c. Install the second adapter the same way you installed the first.

d. Make sure that the adapters are 5 in. (12.7 cm) apart and the elongated openings are on the same side of the ceiling track as shown in the following illustration.

5 inches

Step 6 Grasp the antenna with one hand and the track with the other while inserting the antenna's mounting clips into the ceiling mounting clip adapter until they can go no further as shown in the following illustration.
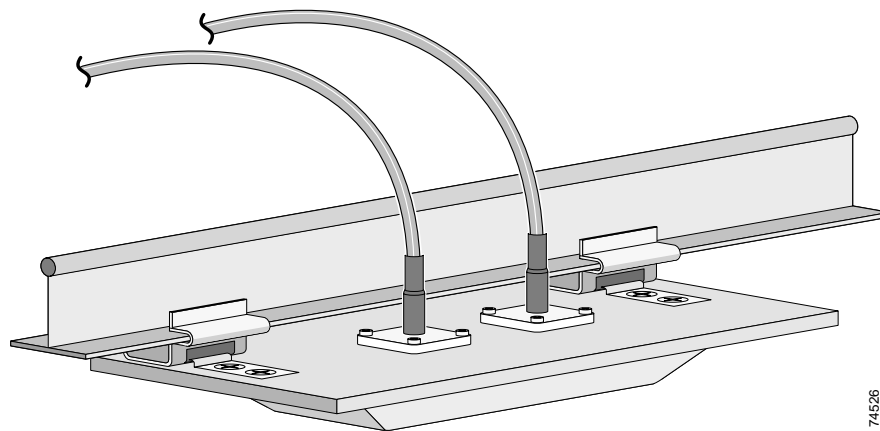
Step 7 Route the antenna cables into the space above the ceiling grid and connect them to the device or extender cables.

Step 8 Replace the ceiling tiles.

> ✎
> **Note** You may have to trim some material from one of the tiles to accommodate the antenna cables.

Cisco Aironet 2 dBi Diversity Omnidirectional Ceiling Mount Antenna (AIR-ANT5959)

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

http://www.cisco.com/register/

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered, you can open a case online by using the TAC Case Open tool at the following URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.

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